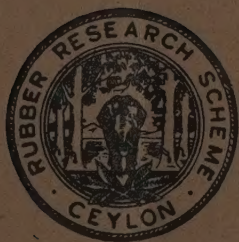


# Rubber Research Scheme (Ceylon)

Quarterly Circular

Special Issue on

BETTER NATURAL RUBBER



September 1950.







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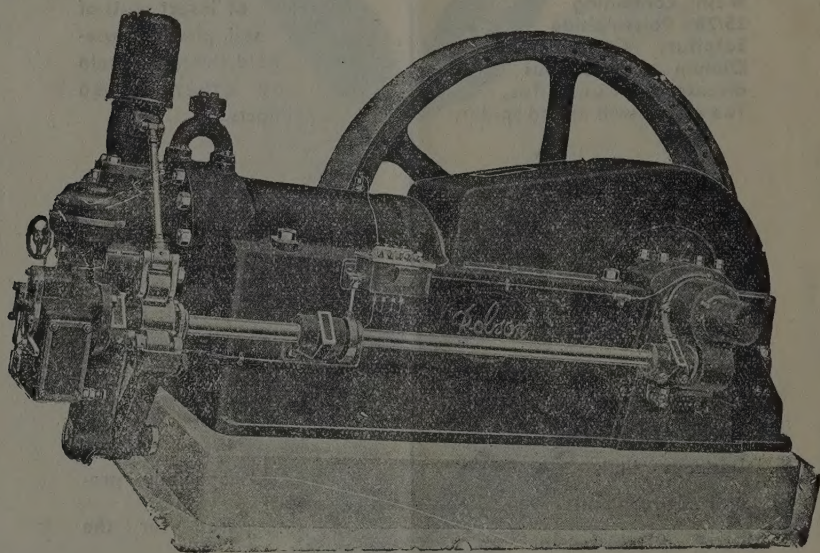
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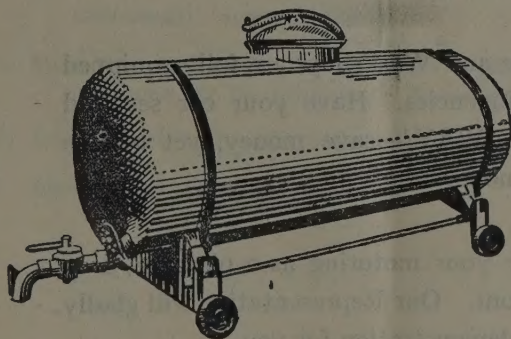
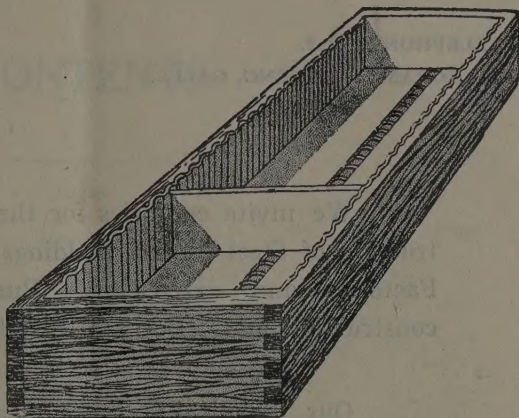


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CONTENTS

This issue of the 'Quarterly Circular' is devoted entirely to the Campaign for Better Natural Rubber.

Its contents include reprints of articles published elsewhere by authorities in other rubber producing countries.

Its purpose is to put before Ceylon's Rubber Producers the urgent necessity to prepare for the changes in rubber marketing which undoubtedly are on the way.

To quote Dr. Verhaar of the Indonesian Institute for Rubber Research "This number is offered as a contribution to the common effort to strengthen the position of the natural rubber industry."



# THE FUTURE OF THE NATURAL RUBBER INDUSTRY IN CEYLON

BY

E. PHILLIS, D.Sc., Director, Rubber Research Scheme

CEYLON'S rubber industry is today facing another crisis — and perhaps one worse than those it has so far faced and weathered. Before the war, natural rubber had no rival. There was over-production, and competition between the various producers had forced prices down to what were considered to be hopelessly uneconomic levels. But a "restriction of production" scheme was formulated by which supply and demand were equalized, and for some years just prior to the war natural rubber enjoyed a safe and steady market.

The war changed this for ever. When the major sources of natural rubber were lost to the enemy, the urgent necessities of war so hastened research on substitutes that synthetic rubber became a commonplace. It was at first nothing more than a substitute for natural rubber, and not a very good one at that, but it served its purpose. American ingenuity and efficiency were not content to let synthetic rubber remain as a rather poor substitute for natural, and there has been, and still is, steady and continued improvement. Natural rubber now has a worthy competitor — one which already is nearly as good, and one which is likely to improve further.

There has been a widespread belief in recent months that much of natural rubber's troubles were caused by the mandatory use of synthetic rubber in the U. S. A., but this appears to be self-delusion, for the actual use of synthetic rubber is approximately twice the mandatory amount. Furthermore, the cost of synthetic rubber is believed to be slightly higher than natural rubber. Manufacturers appear to use synthetic rubber of their own free will, because they like it and not because they must. This at first sight suggests that synthetic is a better product than natural rubber. The answer to this, from the manufacturer's point of view, is that the many advantages in the manner in which synthetic rubber is supplied to him outweigh its defects when compared with the natural rubber available to him.

It is worth while at this stage to consider the relative merits of natural and synthetic rubber. In the first place, there is not one, but many synthetic rubbers. At any one time, a considerable number — perhaps as many as 40 — different types are available and in demand. New ones are continuously being added, usually at the expense of an older type. Some of these types have specialized application depending on, say resistance to oil (Neoprene), or low permeability to air (Butyl), and in such cases, since the synthetic product is more suitable for its purpose than natural, it has permanently supplanted natural rubber. Natural rubber must face the continued loss of specialised markets as new and better types of synthetic for particular purposes are evolved.

Most of the world's natural rubber is used in the tyre industry, and it is here that the decisive battle will be fought. A very recent review of the relative qualities of natural versus synthetic (G.R.S and Cold Rubber) sums up the situation as follows: "Cold Rubber is an improvement over G.R.S. in most of its laboratory properties. It is not, however, the equal of natural rubber, and cannot be expected to do away with the need for natural rubber". (J. H. Fielding, The Goodyear Tyre and Rubber Co., Akron, Ohio.) (Industrial and Engineering Chemistry, August, 1949, p.1560). Natural rubber has two qualities in which synthetic is far behind -- those of self adhesion and of resilience. When these factors are of importance, as in tyre carcasses and in the treads of larger tyres, natural rubber is invariably used. In large tyre treads, heat build up is the important factor limiting tyre life, but with smaller tyres this factor becomes of secondary importance to other characteristics such as abrasive wear and resistance to cracking and growth of cuts. For the present, the combination of the new Cold Rubber and new furnace blacks appears to give definitely better abrasive wear than natural rubber. The evidence concerning cracking and growth of cuts is not clear, but natural certainly has no marked superiority. A small passenger car tyre with a natural rubber carcass and a synthetic tread may be just as good a tyre as an all natural rubber one.

The real advantages which synthetic holds over natural rubber are psychological ones. Synthetic rubber is regarded as a new and constantly improving material. New modifications are welcomed and their potentialities explored by user and producer working in close co-operation. By contrast natural rubber is treated as a substance of which the full potentialities are already known. Research is geared to the synthetic industry, with its promise of spectacular results. There is unbounded confidence, based on the present rate of progress, in the future, and a widespread belief that sooner or later -- perhaps in five years, perhaps ten -- synthetic will oust natural completely. It is this psychological superiority that is so dangerous to natural rubber at the present time, for it affects not only the manufacturer and the research man, but also the consumer, who is becoming synthetic minded. He hears so much of the good points of synthetic rubber, and he knows there has been great progress in the last few years, so that he is beginning to believe that synthetic has already got the natural product beaten.

This is a gloomy picture for the future, but it is largely the result of the lethargy of the natural rubber industry in not changing from its pre-war traditions and methods when natural rubber had no competitor. No one denies that the better grades of natural rubber as at present produced are definitely superior in general qualities to any form of synthetic rubber so far produced. If the qualities of natural rubber could be further enhanced and if the marketing organization of synthetic could be adapted to natural rubber the advantage which natural has over synthetic at the moment could be appreciably increased.

Synthetic rubber is marketed as a "clean" product, and each batch is uniform and is supplied with specifications concerning its physical and processing characteristics. Wartime concentration on synthetic rubber has led to a generation of technicians who appreciate this uniformity and technical grading and who do not appreciate the variable unknown material sold as natural rubber. Moreover, the general trend in processing is to use more and more severe conditions which serve only to emphasise the present defects of natural rubber.



Complaints of dirt in natural rubber are widespread. Dirt is associated with cracking in the finished product, and must be removed by washing, an expensive operation not necessary with synthetic. Even the best rubber is prepared from latex passed through 50 or 60 mesh sieves, which remove only macroscopic, but not microscopic particles, and there is some evidence that such fine particles may be responsible for the start of cracks in treads. Obviously every attempt should be made to prepare clean rubber.

Variability from bale to bale in natural rubber is a marked disadvantage when compared with synthetic rubber. Rubber is sold at present on its appearance, but apart from the obvious advantage of greater cleanliness in the higher grades, there appears to be no relation between appearance and technical characteristics. If natural is to compete with synthetic, it seems essential that grading on specification should come into being. The technical advisers of the natural rubber industry are unanimous on this point. Technical grading and the production of large batches of clean uniform rubber appear to be the minimum essential defensive steps necessary in the competition with synthetic. The value of different grades of rubber, i.e., hard or soft — to the manufacturer is not known, and can only be ascertained by experience, in which process it is essential that the producer takes a lively interest.

A start has already been made on technical grading by French Producers in which No. 1 and No. 2 R.R.S. are tested and each bale marked on a dual basis of viscosity and rate of cure. Other rubber producing countries will probably follow suit and in the near future. At a recent conference in Malaya on Quality in Rubber, the delegates voted unanimously that in their opinion it was desirable to introduce as rapidly as it is practicable a system of technical grading for solid rubber.

It seems reasonably certain that within a limited period much of the rubber from the East will consist of clean, uniform, technically graded material. Within this preliminary framework there must be intensive research on the improvement of the intrinsic properties of natural rubber and on special applications for the speciality rubbers. There will not be one natural rubber, but several, each one particularly fitted to its own special purpose.

In the long run, with natural and synthetic rubbers approximating more closely in their qualities to one another, cost may well be the determining factor. It has been claimed that the present synthetic industry is subsidised by the U. S. Government. Whatever the truth of these claims might be it seems that there is little likelihood of an increase in price when the industry becomes independent of Government. An appreciable fall in the price of either natural or synthetic rubber would undoubtedly help that particular rubber to a larger share of the joint market.

The world's potential output of natural rubber is steadily increasing. Seedling rubber gave about 500 lbs./acre/annum; the best of the earlier clones gave more than double this amount and the best of the modern clones are expected to give four times this amount. Replanting is proceeding apace in many countries, with Ceylon far behind the rest. This is not the whole story, either. Between the two wars, American interests started up rubber plantations in South America, among other places. These areas were decimated by the South American leaf blight — *Dothidella Ulei*. Work during the last 10 years under the direction of the U. S. Department of Agriculture has enabled selections to be made which are resistant to this scourge and at present extensive work is in progress in eleven tropical American countries to develop rubber production, primarily by smallholders.



There is every prospect that the potential output of natural rubber will exceed the demand, unless vast new uses can be found, such as rubber roads. Competition in the rubber industry itself will tend to force down prices which are already low by pre-war standards. Only the more efficient producers will be able to keep going.

A further point of interest is that since natural rubber came onto the market again after the war, the price differential between the good and the poor grades has steadily increased. Although rubber is at present sold on appearance, the bigger purchasers buy on the technical qualities of the various grades and the price differential really represents the extra cost to the user in turning a low grade rubber into a high grade one. This extra cost includes not only extra processing such as washing, but also the value of increased rejects. The actual extent of the price differential may be expected to remain steady, even though the price of rubber falls. So that, in such a case, it would just not be worth while to produce low grade rubber. When overproduction does arrive, it will be the clean, uniform, specified grades of rubber that will find ready sale at the expense of the poorer grades.

How will all this affect Ceylon? The present organization of the Rubber Industry in Ceylon is ill adapted to take part in this fight for survival. Her total production is less than 1/10 of the Far East total, and any action the Dominion takes may not vitally affect the struggle between natural and synthetic rubbers. But if the Dominion wishes to retain her share in whatever market for natural rubber may exist in the future, it is imperative that we should be able to offer rubber in quantity of a standard not below that of other producing countries.

Uniform rubber can only be produced where facilities for bulking latex exist. Specified rubber means that technical tests have to be carried out on each batch of rubber. At a very rough estimate the cost of a single specification will be of the order of Rs. 10—20. It would be quite uneconomic to test each and every bale, and the lower limit at which testing would be feasible is suggested at approx. 2 tons, or in round figures, 1,000 gallons of latex. Few of Ceylon's factories are equipped for handling latex in bulk at this level.

Better rubber, so far as Ceylon is concerned, means centralized factories capable of bulking at least 1,000 gallons latex, and preferably double or treble this amount. Such factories could turn out clean, uniform rubber which could be specified at little cost. In some cases, groups of estates could amalgamate. In other cases, it might be necessary for new factories to be built to handle both estates and small holders' latex. Proposals for centralization on purely economic grounds were made in the Report of the Commission on the Rubber Industry in Ceylon in 1947 — "We feel that reorganization is bound to come sooner or later if Ceylon is to compete with her better organized neighbours further east." This economic need has now been changed to essentiality if Ceylon is to fall in line with the rest of the East and produce clean, uniform graded rubber.

The reorganization of Ceylon's industry into units of 1,000-2,500 acres, each with its central factory, will not be an easy task, particularly on the administrative side, and will entirely upset the present system of handling rubber between estate and ship. Other countries are also faced with these complications—"the erection of central factories also involves certain consequences on the selling side, as it is natural to assume that the selling of the products of the central factory will in most cases (although not

necessarily) no longer be a matter for the individual estates. It is hoped that the higher interests which are here at stake will make it possible to conquer these complications." (Dr. H. R. Braak, De Bergcultures, September 1, 1949.)

In the years to come Ceylon's rubber acreage may be reduced to a fraction of the present value, clustered round central factories, with a total output probably higher than the Dominion's present figure. Smallholders will have their part in the industry as well as the bigger estates for the Central factories will collect and purchase latex. With lowered production costs, through high yielding material and through efficient factories, and with a better product, made possible by these same efficient factories, there need be no undue pessimism about the future of natural rubber in Ceylon. The days of fabulous profits are gone for ever, as the industry settles down to maturity but there are good grounds for the hope that there will be reasonable recompense for efficient producers for many years ahead. The lesson to be learned is that synthetic rubber is no longer a substitute for natural rubber; rather is natural rubber to be regarded as one of a range of alternative materials to be selected or rejected entirely on its merits according to the particular requirements to be satisfied. It is up to the natural rubber industry to make the best of the inherent merits of its product, and to see that those merits are widely known.

## SPECIFIED RUBBERS.

### FROM REVUE GENERALE DU CAOUTCHOUC 1949

**I** NDOCHINESE rubber growers have just taken a very important decision. In the course of recent talks, the Syndicat des Planteurs de Caoutchouc d'Indochine and the Union des Planteurs de Caoutchouc have agreed on the principle of marking current commercial crude rubber types according to their intrinsic qualities.

It is known that the commercial grading of rubber based almost completely on its external appearance and its cleanliness has for a long time been the object of strong critics. It is chiefly reproached that this method enables the sale at a higher price of a rubber which has not necessarily the best mechanical properties, while rubber having excellent properties, but not such a nice appearance may be sold less. The Revue Generale du Caoutchouc already published an article on this important question of marking (1). The views it expressed were based upon some rumors that had arisen from a proposal made by the French Delegation at the 6th meeting of the Rubber Study Group in London and which was included in the Press Communiqué. It is today possible to clarify the decision taken and their consequences. Some weeks passed between the talks of the Syndicat, those of the Union des Planteurs de Caoutchouc, the Communication to the Rubber Study Group and the drawing up of a grading agreeable to all, manufacturers and growers.

Today the marks are agreed and the first shipments of marked rubber are arriving on the French market. It is thus necessary that all the users should well know what use they can be to them.

#### Reminding of some definitions.

We believe first absolutely necessary to repeat two important definitions: what is meant by specified rubber and what is meant by special rubber.

A *specified rubber* is a rubber of current standard, which presents no particular property, but which bears marks enabling the user to recognize the essential properties of the lot (plasticity, rate of vulcanization).

A *special rubber* is a rubber which presents, with regularity and with a very weak variability, definite properties. There are two sorts of special rubbers:—

(1) Special rubbers that are simply *homogeneous*; the properties of these rubbers are not very different from the average of current rubbers, but their variability is considerably reduced.

(2) Special rubbers with *particular properties*; these rubbers have one or several properties that are quite different from the average of current rubbers and offer a very small variability.

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(1) See Rev. Gen. Caout. 26, 389 (1949).



### Basic principles of the marking.

Having thus made perfectly clear what is a specified rubber and what is a special rubber, we are now going to indicate the basic principles, that have been adopted for making specified rubbers.

The two basic criterions that have been considered for grading are: Mooney viscosity and rate of vulcanization.

#### Marks of Mooney viscosity.

The Mooney viscosity is measured on the raw rubber before any mixing; it thus characterizes the plasticity of the raw rubber and its aptitude to mixing; it enables to appreciate the quantity of energy needed for obtaining the plasticities currently used by the manufacturers.

The choice of Mooney viscosity as a criterion of plasticity has been determined by the simplicity of the process and the good reproductibility of the test. Most of the well equipped laboratories have a Mooney viscometer. Besides, it is very easy to make a table of correspondence with the measures obtained with compression plastometers of the Williams, Goodrich, Defo or any other type. The correlation between Mooney viscosity and those measures is proportionately better than the plasticity is greater. The French Rubber Institute intends to publish some results of a study made on the question and they will then make some recommendations for the use of an improved test of plasticity for raw rubber, feasible with compression plastometers of current type.

Raw rubbers are divided into 3 groups of Mooney viscosity. The limits adopted are the following:—

Not very plastic rubber: rubber with a Mooney viscosity of more than 87°C—mark a cross (x).

Fairly plastic rubber: rubber with a Mooney viscosity between 87 and 73°C — mark a circle (o).

Relatively plastic rubber: rubber with a viscosity inferior to 73°C — mark a line (—).

The choice of these marks has a mnemonic signification: the cross (x) means: more Mooney degrees, the line (—) less Mooney degrees and the circle (o) indicates the intermediary position.

#### Marks of rate of vulcanization.

The principle chosen is to vulcanize during a definite time and to measure the modulus. The statistical analysis of numerous tests made in the East enables to acknowledge that this measure will give a grading which, apart very few exceptions, will perfectly coincide with the grading obtained by determining the optimum time of vulcanization of the same mix. It is thus important to point out that it is in no way a measure of the modulus at the optimum of vulcanization. For the modulus at 40 minutes may, according to the rate of vulcanization, considerably change, while the modulus corresponding to the optimum time will generally give much less differences.

The rate of vulcanization is determined by an easy test, made according to the rules of the French specification T 43-001. A typical mix is made, the composition of which is absolutely identical to the composition of the mix recommended by the Crude Rubber Committee of the A.S.T.M., i.e.

Rubber	...	...	100
Stearic acid	...	...	0,5
Zinc oxide	...	...	6
Sulphur	...	...	3,5
Mercaptobenzothiazole	...	...	0,5

With this mix, samples are vulcanized at a temperature of 127° C during 40 minutes. These operations are always made according to the French specification T. 43-001, except for temperature: the temperature indicated by the specification was 125° C. It was thought better to take 127° C as it is currently used in the U.S.A. In the samples thus vulcanized are cut Shopper rings of type A, of the French specification T. 46-002.

The measure of the modulus at 600% of elongation is made on these rings (charge in kg/cm<sup>2</sup> corresponding to an elongation of 600%). If this modulus is inferior to 30 kg/cm<sup>2</sup>, the corresponding rubber will be said with slow vulcanization. The corresponding marks are colours:—

*Red* for slow vulcanization,  
*Yellow* for fair vulcanization,  
*Blue* for fast vulcanization.

Here again the mark presents a mnemonic significance: red meaning slow speed, blue, fast speed and yellow the in-between, as road signals.

#### **Arrangement of marks of plasticity and rate of vulcanization.**

##### *Code.*

The signs, cross, circle or line, corresponding to plasticity are placed on the bale *in the colour* corresponding to the rate of vulcanization. It is thus a very simple code which, for an informed user, gives immediately the principal qualities.

So as to illustrate as clearly as possible how the marking will be made, a synoptic table (\*) shows the different marks and the corresponding numerical values for plasticity and rate of vulcanization.

This table should be into the hands of all those who are more or less interested by rubber problems: producers, dealers, purchasers, manufacturers, chemists, etc.

#### **Interference of the marks with the usual commercial grading.**

The last rule of marking and not the least is the following: the marks corresponding to the previous properties, plasticity and rate of vulcanization, are added to the usual commercial grading and does not change it at all. They represent an additional indication meant to help the user in showing the intrinsic properties of the commodity, but they do not in the least interfere with the system of sales based upon appearance, as it is done today. There will thus still remain on the market smoked sheet No. 1 and No. 2, brown crepes, etc. The various grades will be on sale at the *same price, without any premium*. Already old customers will be kept.

The users may thus be ascertained that the qualities of cleanliness which are the base of the old grading will be appreciated *in the very same way* and that their purchases are to be made on the same bases. The new marks add new data for the technician but do not leave out any of the advantages of the usual grading.

#### **Advantages of the use of specified rubbers.**

What may be the advantage for a manufacturer of using specified rubbers? It should first be pointed out that there can be no inconvenience since, to the worst, if the user does not pay attention to the marks, there is no change with the past.

# IDENTIFICATION OF SPECIFICATION RUBBER

## Blue Marking



LOW PLASTICITY  
*Fast Vulcanisation*

## Yellow Marking



LOW PLASTICITY  
*Medium Vulcanisation*

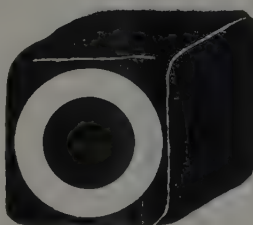
## Red Marking



LOW PLASTICITY  
*Slow Vulcanisation*



MEDIUM PLASTICITY  
*Fast Vulcanisation*



MEDIUM PLASTICITY  
*Medium Vulcanisation*



MEDIUM PLASTICITY  
*Slow Vulcanisation*



HIGH PLASTICITY  
*Fast Vulcanisation*



HIGH PLASTICITY  
*Medium Vulcanisation*



HIGH PLASTICITY  
*Slow Vulcanisation*





The chief advantage is the possibility of avoiding most of the inconveniences caused by the rubber variability. The inconveniences are well known. They generally imply :—

1. Waste caused by a bad vulcanization, most often by under cure. When an amount of slow rubber replaces an amount of fast rubber, this may result in very insufficient vulcanization and an important percentage of goods impossible to sell, before the reason is known and the remedy found. All those who have known these inconveniences, chiefly in the making of inner tubes, understand what they mean.

2. Bad calendering and extruding, resulting most often from a lack of milling which is the consequence of using a soft rubber and then a harder one. It is then necessary to take the profiled or badly prepared sheets again, to heat again, to calender and extrude again, and all this means waste, money, an increased risk of prevulcanization without mentioning the perturbations implied for the program of production.

There may also be some scorching in the extruders which have no other reason than unexpected change from a soft and slow rubber to a hard and fast one.

3. Important difference in the quality of finished goods. Although the industrial mixes are much less sensible than the text mix, type C.R.C., to rubber variations, these variations may yet be quite important in the finished goods. If the good is subject to conditions of reception, a security margin which is often very expensive must be allowed for.

The above marks enable to remedy to these difficulties and to save money. The way of using them will be different according as the consumer will be a large one or a small one.

The small manufacturer will find advantage in always using the same type of rubber. It will be easy for him to get his supplies as he does not need large quantities. It will not be difficult to give him satisfaction.

Larger consumers may choose between two methods :—

- the blending method,
- the fitting method.

Blending consists in using in a formula a definite percentage of each type of rubber. But you will say that this is not new ; it is already done today. It is true but is done without any data, and in a very expensive way. These mixes are made with rubbers of different origins, but often of the same crop which prevents the blending of having a complete efficacy. It is made in an expensive way for a statistical working out shows that, if a regular blending is wanted, the operation must be made on considerable stocks if these stocks are built from different shipments. And the stocks are expensive. With a systematic blending based on marks, the basis will be more serious. Experience will quickly show the user how to make, from available quantities, combinations practically equivalent in plasticity and rate of vulcanization. And if unfortunately the market cannot supply when wanted the qualities required for the blending, there will remain the possibility of fitting.

The technique of fitting consists in studying beforehand the processes giving the same results (plasticity of the mixes — time of cure, quality of the finished good) with the different marked grades. For instance, to prepare the rubber intended to a friction mix, it will be known beforehand

that it is necessary to mill  $\times$  minutes with < cross > rubbers and  $\times$  minutes with < line > rubbers. Then it will be known that for a cure of, say, 5 minutes for a determined moulded good, 0,8 of accelerator in the formula will be necessary with red rubber and 0,6 only with blue rubber. Thus for each period of the manufacture, instructions will be established *beforehand*. It will then be possible to obviate to variations and to suppress this so expensive and so demoralizing cause of waste.

It will also be possible to revise attentively the formulae of the specifications. Thanks to an increased regularity, the security margin will be lowered, i.e., more economical mixes will be made and it will be possible to scrape up quite interesting percentage on the prime cost.

We believe that according to circumstances and account being taken of everything (wasting of time avoided, less frequent < scorching > better respect of quotas and narrowed tolerances, revision of formulae), all these possibilities enable a profit varying between 2 and 10% and sometimes more of the price (material + labour).

But the specified rubber has some more advantages. We only intend to give a few of them :—

- reduction of stocks and corresponding locking up,
- reduction of the time of milling. It will of course be possible to reduce the time of milling of < line > rubber and even < circle > rubber which is generally fixed too long so as to ascertain a sufficiently low plasticity,
- determination of definite basis for reception control and complaint to tradesmen.

The rubber consumer thus finds in specified rubbers a powerful weapon to reduce his costs, to increase his production and to improve his technique.

### Future Prospects.

These prospects are two fold. First there will sooner or later appear preferences for such and such a kind. Thus it will be possible to answer with certitude in the future to the eternal question of growers to manufacturers : < What kind of rubber do you want ? >

For some making, it will appear that certain kinds are definitely better than others. For a quick moulding of small goods, blue rubbers may be chiefly wanted, for they will allow to save the quantities of accelerator necessary to a determined vulcanization. Many consumers may also want to reduce the energy needed for milling by using as much as possible < line rubber >

It may even happen that consumer will find advantage in the use of rubbers marked identically coming from commercial crude rubber types until now considered as secondary. Thus the use of brown crepe marked with a blue line may be preferred to the use of rubber smoked sheet No. 1 marked with a red cross, if fast vulcanizations are wanted as well as a small use of milling energy.

After some time, the consumers will be all by themselves able to progressively change current commercial customs. These changes which will result from the play of the law of supply and demand and which will be based on the knowledge of intrinsic qualities are of course better than any violent change of the ordinary state of things.



Then by a better knowledge and the realization of the necessary means, it will be possible to direct rubber production towards the most wanted grades. For instance, the number of criterions of quality will be increased. For instance, properties corresponding to mixes for black will appear in the standards. Consumers will quickly enough find the most interesting mixes for such and such a marking and it will be an important step towards a progressive transformation of ordinary rubber into specified rubber, and then into special rubber.

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# IMPROVEMENT IN THE QUALITY OF NATURAL RUBBER.

MALAYA 1949.

AT the invitation of the Board of the Rubber Research Institute, Malaya, a meeting was held at the Institute on Monday and Tuesday (September 12th and 13th) to discuss the general problems of improvement in the quality of natural rubber.

This invitation began :—

Quality in natural rubber in the various forms in which it is exported from producing countries has always been, and more particularly since the war, a subject of the greatest interest and importance to the industry.

With the rise of the American synthetic rubber industry and the important technical developments in that industry since 1945, the urgent need for producers of natural rubber to devote much more attention to quality is generally realised and appreciated. As quality is to a large extent determined by methods of preparation and processing and careful grading of the product, it is felt that attention might well be focussed in the first place on an overhaul of current methods. Such an overhaul must be followed with the least possible delay by the introduction of improved and new methods.

We believe that immediate improvement and future progress can only be effected by close co-operation between those who are most vitally concerned in the progress of the natural rubber industry. Producers, their research organizations and the market organizations must first work together. By such co-operation much could be done to make the fullest possible use of present knowledge and new developments that will aid natural rubber in its competition with the synthetic materials.

The Board of the Rubber Research Institute, in consultation with cognate organisations for rubber research, has reviewed the position from a technical standpoint and plans have been prepared for further investigation and development work. With the approval of the Board of the R. R. I. it is now desired to arrange a meeting at the Rubber Research Institute, Kuala Lumpur, at which representatives of producers and marketing organisations may discuss with research workers and technical officers problems of current interest and plans for future work. It is hoped that this Meeting may prove of interest and value to all concerned and may help to prepare the way for closer co-operation.

The meeting was held in two parts; the first gave an opportunity for an exchange of views between specialists engaged in the Malayan rubber industry, the Institute staff, and visitors from Rubber Research centres in other countries. These included representatives from the following organisations :—

### **Specialists engaged in the industry in Malaya:—**

Boustex Ltd.;  
Dunlop Malayan Estates Ltd.;  
Harrisons & Crossfield (Malaya) Ltd.;  
H. & C. Latex Ltd..  
Guthrie & Co., Ltd.;  
Lee Rubber Co., Ltd., Singapore;  
Malayan American Plantations (United States Rubber Co., Ltd.);  
Socfin Company;  
The East Asiatic Co., Ltd;

### **Overseas Research Organisations:—**

The British Rubber Producers' Research Association;  
The London Advisory Committee for Rubber Research, Ceylon and Malaya;  
The Rubber Research Scheme, Ceylon: Represented by Director E. Phillis, Ph.D., D.Sc.;  
The Indonesian Institute for Rubber Research, Buitenzorg.  
The Institute for Rubber Research in Indo-China;  
The Rubber Foundation, Delft, Holland;  
The A.V.R.O.S. Experiment Station, Sumatra;  
The General Rubber Experiment Station, Java;  
Bureau of Native Rubber, Batavia.

The second session was representative of all sections of the Malayan rubber industry, as can be seen from the following list of additional organisations represented:—

The United Planting Association of Malaya;  
The Malayan Estate Owners' Association;  
The Honourable Tuan Sheikh Ahmad, representing smallholding interests;  
The Incorporated Society of Planters;  
The Singapore Chamber of Commerce Rubber Association;  
The F.M.S. Chamber of Commerce;  
Selangor & Pahang Rubber Dealers' Association;  
Penang Rubber Exchange;  
Rubber Traders' Association, Penang and P.W.

The problem of quality is a complex one, and the word is used rather broadly to include all the properties of rubber which are of importance to the manufacturer of rubber goods. The growth of the U.S. synthetic industry has been such that it is now clear that in future natural rubber and synthetic will compete for the world market on a dual basis of price and quality. Post-war developments of synthetic rubber have led to improvements in its quality sufficiently great for it to offer a sharp challenge to natural rubber in a number of fields. Moreover the vast sums spent in the United States on synthetic research may be expected to lead to progressive further improvement. In the face of this threat it is essential for natural rubber producers to adopt a forward-looking policy and to seek to meet the synthetic challenge by improvements in the quality of the natural product.

The research work of the R. R. I. and its sister organisations, the British Rubber Producers' Association and the London Advisory Committee for Rubber Research, is directed to this end.

The main subject before the technical session was a discussion of what improvements in quality can be effected without involving revolutionary changes in methods of rubber production. It was unanimously agreed that much could be done to assist the manufacturer to make more



effective use of natural rubber by the introduction of a system of grading based on the technological properties of the material. At the present time, natural rubber is criticised mainly on two grounds, that it is dirty, and that its quality is variable. The technical session concluded that these defects must be overcome as a minimum first step in the competition with synthetic.

French producers have already taken an important step in this direction by organising the scientific testing of all their production of No. 1 and No. 2 R.S.S. As a result, all bales are now marked in such a way as to give manufacturers a direct indication of their technical quality. The Malayan problem differs in a number of ways from that of Indo-China, but it was recommended by the meeting that Malaya should seek to adopt a system of grading capable of application to rubber produced both on estates and smallholdings. In this connection the development of centralised manufacture was commended as a major contribution to the improvement of the quality of smallholders' rubber.

This report and recommendation were received by the general meeting and their implications fully discussed. Difficulties in the way of a general technical grading scheme are very substantial, but the meeting finally recorded its view that no effort should be spared to overcome them. A small committee was therefore set up to investigate the problem in more detail, and to formulate proposals for the orderly introduction of a scheme of technical grading throughout Malaya. It was further resolved that all Malayan organisations represented at the meeting be invited to nominate delegates to a body to be called the Technical Organisation of Natural Rubber Producers, Malaya. This body would have the functions of co-ordinating the work of all interested in the quality of natural rubber and of organising the necessary work to be done in order to give effect to the recommendations of the Committee."

I attended this conference at the direction of the Board of the Rubber Research Scheme and immediately on my return, presented the following report to the Board of the R. R. S.—

The short time available outside of the meetings was fully occupied in discussions with members of the staff of the R. R. I. on many common problems. The R. R. I.'s experiment station was visited on Thursday 15th, in the company of the Director, Dr. Mann, the Pathologist Mr. Alston and the Botanist, Dr. Baptist. Among other members of the staff with whom I had discussions, I should like to mention especially Mr. Philpott and Mr. Sharp, both of whom have a practical knowledge of Ceylon's problems. I also discussed various technical matters with Mr. Martin of the London Advisory Committee.

Apart from this short report on my visit, there are certain impressions concerning the meeting which I should like to stress.

The first is the very wide range of interests represented; it includes all the Rubber Research Organisations in the East, the Research Organisations in Europe, and Malayan planting and commercial interests. This wide range of interests readily arrived at certain unanimous conclusions. Firstly that the competition of synthetic must be faced now and secondly that the Industries' contribution should be clean specified rubber in large bulk at the earliest possible moment. The sense of urgency was most noticeable.

In brief, the position appears to be as follows: Natural Rubber has a war-time engendered competitor — synthetic rubber. It is generally agreed that synthetic is not yet as good on the whole as natural rubber, but that the leeway is small. Moreover, synthetic in itself is a highly competitive industry, with tremendous research in progress both on the technological and marketing sides. The American producer goes out of his way to find new uses for his products and to produce new types suitable for particular applications. Synthetic is already better than natural in such specialised applications as resistance to oil, air permeability, and perhaps in abrasion resistance. Little by little, natural rubber must expect a continuous loss of segments of its market. Furthermore, synthetic has great advantages over natural rubber as it is at present supplied to the market in its uniformity in physical and chemical characteristics and in its cleanliness. It is true that there is mandatory use of synthetic rubber in the U.S.A., but the latest reports suggest *that the actual use is about double the mandatory amount. In other words, manufacturers use it because they like it and not because they must.*

Natural rubber must face this competition if it is to survive. Informed opinion at the meeting — and here the high standing of the delegates must be stressed, — gave the probable life of the natural rubber industry, if nothing is done to check synthetic, as two to four years. Moreover, it was stressed that unless the competition of synthetic is faced *now*, the momentum which synthetic is already acquiring will make it impossible ever to overtake it.

Natural rubber must fight its battle on two fronts. So far, synthetic has been used above mandatory needs because the actual users like it. Natural rubber must be tailored to fit users' likes. Moreover, it would appear that the public is becoming conscious of the merits of synthetic and is becoming synthetic-minded. The good points of synthetic are stressed and its disadvantages just not mentioned. The public is told that cold rubber has a 30% better abrasion resistance than natural. It is led to expect longer tyre wear. It is not told that synthetic is below natural in ageing, that it will develop cracks, that cuts will grow faster than with natural, and that skid resistance, particularly on ice is much lower. Natural rubber interests *must* emphasise the merits of their product if they are to retain their market.

It must not be forgotten that the manufacturer supplies what the public demands, and that consumer demand may bear no relation whatever to real worth. Apart from this factor, the manufacturer is not to be diverted by advertising; the technical qualities of his raw materials in conjunction with price are to him the determining factors. Natural rubber interests must make the very best of their product, and must be prepared to fight a price war for years to come.

The main topic discussed at the R. R. I. meeting was the direct approach to the manufacturer on the quality basis. Rubber is almost the only major commodity sold on appearance and without regard to the technical qualities which are really what the user is interested in. The user, from all information available wants greater cleanliness and greater uniformity in technical characters.

Cleanliness in rubber depends on the care taken during its preparation, and in general small holders rather than the big estates are the usual offenders.

Uniformity was discussed at length, and it was generally agreed that the key to uniformity lay in the bulking of latex before coagulation. This poses special problems for Ceylon and Malaya and it was generally agreed that centralised factories are the ultimate answer.

The French and Dutch interests are on the whole in a much better position to produce uniform rubber, through large central factories, and the French have already put into practice a scheme for grading rubber on its characteristics. It is believed that the Dutch preparations for a similar step are already well advanced.

When challenged as to the results of such grading, the reply was that the scheme had not been running very long, but was evincing very great interest. The larger Malayan estates are already carrying out (Soc-Fin), or are prepared to carry out, such grading but the problem of the small holder and smaller estates still remain.

It was emphasised that grading was a "service to the consumer," that no premium was expected for it, and that it was regarded as an expenditure incurred to regain hold of a slipping market.

Legislature is already in progress in Malaya in the form of a Bill to set up the Malayan Rubber Export Board, (to be introduced on Tuesday, September 20th). The intention of the Bill "is to remove the grounds of complaint, received from buyers abroad for some time past about the quality of Malayan shipments."

The determination of Malayan interest to go ahead with all the steps necessary to produce clean, graded rubber in bulk is indicated in the Press release on the R. R. I. conference.

The price war which must be carried on against synthetic rubber makes it essential that rubber shall be produced on the best possible economic lines. One far reaching step in this direction is the planting of high yielding rubber. I was unable to get figures for replanting, but I was very impressed by the amount of replanting that I saw in Malaya, and the fact that there was considerable replanting was confirmed by competent Malayan observers. It is possible that at least a quarter — or even as much as a third of Malayan rubber — is now high yielding clonal material, which so far as I can gather, is producing rubber at a good profit even at the present low market prices.

I was much impressed during my stay in Malaya with the attitude of the Rubber Industry to the present crisis. It is one of awareness, aliveness, and one might even say, battle-lust. There is nothing despondent and no intention of being put off by difficulties. One cannot help feeling that the Jap occupation and the present bandit troubles have stimulated the rubber industry.

This same aspect appears to animate the French and Dutch rubber interests. There is a further point which should be mentioned — that while all are agreed on co-operation in fighting the synthetic menace, there can only be fierce competition between the various natural rubber interests. If there is over-production, there will be no Restriction plan to help matters, and the more able producers will take whatever they can of the market.

#### **Personal Views on Ceylon's Problems.**

It seems clear that clean certified rubber *for which no additional premium* is asked will command the attention of the market to the exclusion of the present product, which will either have to accept a lower price or remain unsold. The Director of the R. R. I. points out in a summary of price trends that the price differential between good and poorer grades has steadily increased since natural rubber again became available in quantity after the war. It is very probable that the advent of clean specified rubber will widen this price disparity.



Indonesia and Indo-China and to some extent Malaya, are in a favourable position, for with their large estates, bulking of latex becomes possible, and so they are in a very favourable position to offer the service at very little cost to themselves. Ceylon's conditions are just the reverse and any grading scheme presents formidable difficulties.

It must be clearly recognised that this is a *battle for survival*, firstly against synthetic, and secondly against other natural rubber interests, that Ceylon's entry into the battle is belated, and that she has definite disadvantages to face.

Firstly, her capital, in the form of her rubber plantations, is obsolescent. There is no point in fighting now if we are doomed to go out in a few years through ageing plantations. There must be replanting with high yielding material now.

Secondly, there must be centralisation so that latex can be handled in bulk. Only then can cleanliness and grading be tackled. It was estimated at the Conference that testing for specification, with batches of the order of 2.5 tons would cost 1/10 cent (Malaya) or 1/6 c. (Rupee) per pound. The only answer is Centralised factories producing branded sheet, with a heavy penalty on all unbranded sheet. Malaya is hoping to start Centralised factories with help from Imperial funds.

It is useless for Ceylon to believe that she will be able to export a good proportion of her rubber in manufactured form. All rubber producing territories have similar ambitions, and their plans appear more advanced than Ceylon's. From a very cursory observation, it seems to me that Malayan Chinese labour, with factory traditions, might be more efficient at present than Ceylonese. This does not rule out the possibility that if we can hold the battle now, it should be feasible to train Ceylonese labour for factory work in the future. The point I wish to emphasise is that we cannot rely on local manufacturers to support Ceylon's planting industry in the immediate future.

The future of the Rubber Industry in Ceylon, so far as smallholders are concerned must become more and more a matter for Government control and aid. I believe that most estates, faced with a grading and specification problem could, and would co-operate. What of the smallholders? Central coagulating centres are essential if this new graded and specified rubber is to be produced. Coagulum could be collected daily and dealt with in a few super factories. The provision of such coagulum centres and rolling mills must, I feel, be a matter for Government. The question is not 'Can we afford all this,' but rather "Can we afford not to do it." The Conference' answer was an unequivocal. *We must.*

One further point. Specification means testing to close limits. New specifications are being made by an International body and I have asked for copies as soon as available.

It was proposed at Kuala Lumpur that the various Research Schemes should be the Standardising Body for uniformity of testing in the East. Who is to do the testing in Ceylon? It is properly the duty of the Scheme to supervise it, for which we must have equipment. I discussed this tentatively with Mr. Martin of the L. A. C. and with Mr. Philpott. At a rough estimate the equipment required will cost Rs. 50,000/- exclusive of driving-power and housing. Delivery time — at least a year and probably two!

Much of this was drafted on the plane homeward bound. I can only hope that it will carry to the Board the sense of extreme urgency that pervaded the Conference, and the relief expressed by all Malayan interests that their Research Institute was alive to the present needs. The papers presented at the Conference are available to members of the Board.

(Sgd.) E. PHILLIS,  
Director.

IN the course of discussions at this conference, a full appreciation of the present competitive position of natural rubber was made by Dr. E. M. McCole, the Technical Director of the Plantations Division of the United States Rubber Company in Malaya. This statement was as follows:—

**Comments made by E. M. McCole.**

"The comments to which I have listened this morning indicate that people here generally are unfamiliar with the method followed by the American rubber manufacturer in choosing the grades of rubber he purchases. Take for example the tyre division of any large manufacturer. His technical men have determined by many careful experiments just what grades of rubber are required in each of his tyres to produce the competitive quality required. Thus, for example, suppose it has been shown that the desired quality is obtained using Grade 4 smoked sheet, and that no economically worthwhile improvement can be obtained using a higher quality sheet. Suppose, further, it has been shown that the same quality tyre is obtained using an equal mixture of Grade 3 and Grade 5 smoked sheet, or of Grade 2 sheet and, say, Grade 3 brown crepe. The technical man, usually known as a compounder, charged with the job, is constantly following the price of rubber, and will order for use in that particular tyre the thus approved grade or combination of grades having the lowest average cost. His orders are ultimately collected in the hands of that company's crude rubber buying division, who merely execute them. This crude rubber buying division will generally have its own rubber inspectors who inspect a given sample of each purchase to insure that it meets the R.M.A. appearance specifications for the grade ordered, and who will of course make a claim against any lot which is found not to meet these appearance specifications. But these are more or less by-products of the system, for in the final analysis it is the technical man who judges the rubber's performance and it is he who must be sold on the value of any improvement. Conversely, if he becomes sold, because he has found that the improved rubber offers a monetary, or quality advantage which justifies its purchase, then that company's buyer will get his orders and the new rubber will be purchased.

Don't ever forget, therefore, that in the American market, at least, it is generally the technical man who is the final judge of what rubbers shall or shall not be purchased, and it is therefore the technical man whom you must convince of the value of any rubber offered for sale. The present system of visual grading is a superposition, useful only because of the lack of a grading system based on intrinsic properties.

The proposals made at this meeting are being made for the purpose of providing a measure of technological information as to the intrinsic physical properties of each lot of rubber shipped from Malaya, and this information is aimed directly at the technical men who determine rubber-buying policy.

I believe it is important for you to realise just what you are up against in the matter of competition from synthetic rubber in order that you may be able to judge how important to your continued business life this matter is.

In the final analysis, you are competing with the American synthetic chemical industry, a very competitive business which was suckled on our war needs in World War I, and weaned and attained manhood in the 1920's and 1930's in which hard, tough competition was the order of the day—every day, in every week, in every year. Out of this grew the

competitive technique which is being used now to sell synthetic rubber. It involves intensive research by teams of chemists, physicists, and engineers, very careful attention to quality and to uniformity, combined with clever advertising. The watch-word in the chemical industry is that he who cannot constantly improve his product, and *lower its cost*, mark that, and *lower its cost*, may not stay in business long.

I am quite familiar with the type of research being done on synthetic rubber, and with some of the men doing it. I can most gravely assure you that they are largely men who have grown up in this competitive atmosphere, and they are generously supplied with the competitive spirit. Their present goal is a product or group of products which will equal or excel natural rubber in overall average quality. They are not anti-British or anti-Dutch or anti-French or anti anybody or anything. They are not even anti-natural rubber. They are merely very pro-synthetic rubber. They are in a competitive game — if you like — with the quality of natural rubber as the goal. And, mark you also, they are not thinking about the premiums they may be able to charge for this improvement or that, but how to get these improvements at a lower cost!

Now contrast that picture with the condition of the natural rubber industry. Here you are still thinking in the pre-war groove where there was only one rubber — natural — and he who wanted it had to come to you to get it. Your selling technique, the open market, is as antiquated as the Ark and about as useless in the present war you have on your hands with synthetic. The synthetic research and development men regularly sit down with the rubber manufacturers' technical men to determine how synthetic rubber can be altered to better serve their needs. They are the real synthetic protagonists and salesmen. Yet you sit in your offices and wait for the American manufacturer to come to you to buy your product, and when he buys it he gets a commodity that is much dirtier than synthetic, nearly 100% more variable in most of its important physical and chemical properties, and therefore much more difficult to use in the modern high-speed, streamlined, rubber factory which was geared during the war years to using a much less variable, and more high-temperature-resistant synthetic. True, it is still superior to the best synthetic in some properties, tensile strength, resilience, and others, and it is that superiority which is the only reason why anyone still buys your product. Given equality, or even equality in some properties, and the choice, under present conditions, is likely to be synthetic every time.

What have you done to date to meet this synthetic competition? Isn't it true that, outside of your research stations you have done absolutely nothing other than to demand that Americans buy more natural rubber and less synthetic, and at a higher price for natural? Why do you suppose that in 1948 America consumed about 170,000 tons more synthetic rubber than the legal mandatory requirement? Isn't it obvious that superior processing and technical quality had something to do with it?

The proposals made at this meeting are to the effect that you begin to do something about this situation by indicating two important characteristics of each lot of rubber shipped, namely, rate of cure and plasticity. Although this is admittedly only a beginning, it is at least something, and will enable the buyer to reduce very markedly his operating difficulties, which are due to variability. Even more important, it will indicate to him that you are prepared to do something about quality, and are actually doing it!



So far, at this meeting, all I have heard has been why these proposals couldn't be put into effect. Do you suppose we in America created and built a synthetic rubber industry in time to help win a war by thinking up all the reasons why it couldn't be done? I tell you that it's time we in Malaya realised we are in a serious war with synthetic rubber and that we now have no time to waste in devising ways by which we can't do anything about quality. For it is my considered opinion that if we ride along as we are doing now, paying no attention to the variability of rubber or to improving its quality, we may easily be out of business within ten years.

I am convinced that we here in Malaya have just as much ingenuity, and just as hot a spark as the people who created the synthetic rubber industry. But we can't let the research stations do it alone, for it will take the wholehearted co-operation of the planter, large and small, the dealer, the broker and the exporter.

I would therefore suggest that this meeting form itself into a permanent organisation to further the improvement in the quality of natural rubber; that as a first step it appoint a committee to investigate and determine how a certification scheme can best be set up, and a second committee of business men charged with finding the necessary funds and getting it going. "Thank you."

In my report to the Board on this meeting, mention is made of the intention to set up legislation "to remove the grounds of complaint received from buyers abroad for some time past about the quality of Malayan shipments.

This has now been done.

The Malayan Government has enacted an ordinance entitled "The Rubber Shipping and Packing Control Ordinance, 1950." The effectiveness of this ordinance is indicated by a statement recently made by the Chairman of the Singapore Chamber of Commerce that there has been a marked decrease in the number of claims for under contract shipments since legislation for control of quality and packing was proposed, and there have been fewer dishonest shipments.

# STEPS TOWARDS UNIFORM NATURAL RUBBER

(Being extracts from an article by Dr. Schweizer, Director of the  
C.P.V. Indonesia — from Archief Voor De Rubbercultuur  
December 1949).

**A**T a Members' Meeting of the Association of Owners of Rubber Estates in Indonesia on 3rd June, 1949 Mr. J. G. Van 'T Oever, its Chairman, pointed out the necessity of strengthening the position of Producers of Natural Rubber, with a view to the continual improvements being made in Synthetic Rubber. This advice was also based on discussions by experts in Holland, England and France and the not very satisfactory progress of the latest Rubber Study Group Meeting in London. During the meeting it became clear that—apart from lowering cost of production (still our mightiest weapon) — the producers of natural rubber will have to aim at turning out a product of uniform quality, if they wish to compete with synthetic rubber in the long run.

It was decided to establish a "Committee for Uniform Rubber" whose task it will be to advise members as soon as possible about the various possibilities of improving the quality of rubber.

At first, we thought that 75% of consumers' wishes could be met by means of short-term improvements which might be made without too many alterations, thus leaving only 25% of their wishes to demand drastic changes (central manufacture of rubber; sale on the basis of "inner qualities"). During the discussions in our Teams we were obliged to alter this latter figure, however, to 90%: i.e. it is clear that many drastic changes are required. The stringent demand is: to put standardised rubber on the market, which must be clean and homogenous in its inner qualities, namely: plasticity and rate of cure. This is to be given as service of the producer to the consumer: it is the minimum basis on which natural rubber will be able to compete with synthetic rubber in the world market. If this is disregarded, natural rubber will disappear within short from the markets of the world. This is the conviction of our experts.

It is a very striking fact that the British and French rubber experts in S. E. Asia have arrived at practically identical conclusions.

Nothing indicates better the seriousness of the situation than this nearly alarming unanimity of all the experts: only dangers of the very highest order can join together so many forces.

Our olders readers will say: "Little news under the sun; who doesn't remember the campaign started many years ago by DE VRIES, VAN ITERSSEN and VAN ROSSEM to obtain uniform rubber, "certified" rubber? The question of centralising manufacture was already broached years ago by VAN LENNEP."

Correct indeed, but the realization of the proposed measures has now become an absolute necessity because of the threat of synthetics. Realization, however, is a matter of *organisation*.

The solution of this side of the problem is much more difficult than that of the technical side. Like in wartime, when scientifically established facts are quickly put in practice under the stress of circumstances, it is now necessary to overcome the difficulties of economic organization speedily, under the threat from synthetics. Rubber Producers should fully realize that they have to bear this moral responsibility — or, more positively expressed: the Rubber Producer has his fate entirely in his own hands. Concerns which will now give the example, will be praised as pioneers of true understanding and progress.

This, we think, places the problems in the competition between natural rubber and synthetic rubber in their true light and their proper place.

## SEVENTH MEETING OF THE INTERNATIONAL RUBBER STUDY GROUP.

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Brussels, Belgium.

May 1950.

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(Extract from Press Summary).

**T**HE Group gave a general welcome to the French proposals for the developments of specification rubbers at no premium as holding out the prospects of a substantial step forward in the marketing of rubber, according to uniform technical specifications of maximum value to rubber manufacturing industries, and it was agreed that producing countries should supply specification rubbers in sufficient quantity to enable manufacturers to report upon their value to them. The cooperation of manufacturers has been assured in the necessary interchange of technical information under the aegis of the International Rubber Research Board.



## AN APOLOGY, AN APPRAISAL OF PRESENT TRENDS. \*

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I have been in Ceylon for just over a year and if readers feel that I am presuming far too much on my short acquaintance with Ceylon's rubber, I can only plead that the matter is urgent and that in my position as Director of the R.R.S., I am in a favourable position to become aware of trends in the industry.

**Prices.**—The recent rise in the price of rubber, and its present high level are transitory. There are three main reasons for this increase. Forecasts that the U.S. car manufacturing business had passed its peak proved to be wrong, and the spring of 1950 set new records for car production — and tyre requirements. About this time there was a serious coal strike in the U.S. which cut short the supply of styrene — a coal tar derivative which forms a basis for synthetic rubber. And at the same time political developments in Indonesia (which produces 40% of the world's natural rubber) led to delays in shipment. An increased demand was faced by a diminished supply — with the safety valve of synthetic rubber temporarily jammed through shortage of raw materials and consequently prices rose sharply.

The latest figures for rubber production indicate that the 1950 production of natural rubber will be 140,000 tons in excess of requirements. Add to this the inevitable increase in synthetic production caused by high natural prices (synthetic — 18½ c lb. natural 35 c) and by the present necessity to increase synthetic production for strategic purposes — and the present excess production of 10% may well become a glut.

Instead of a sellers' market, a buyers' market will undoubtedly develop and natural rubber will have to compete on its merits with synthetic — at 18½ cents/lb or thereabouts.

Hardly a month goes by without some improvement on one or other of the synthetic rubbers being reported, — and the margin between natural and synthetic rubber is steadily lessened. If natural rubber is to survive it must make the best of its intrinsic qualities.

### **The future prospects of sole and blanket crepes.**

Ceylon's rubber prosperity depends to a large extent on its production of sole and blanket crepes. The outlook for both is far from bright. Rubber in its natural state is not an ideal material for footwear. It is hard in cold weather and soft in hot and becomes sticky as it ages. It is not porous as is leather.

Much of the post-war demand for sole crepe has been caused by the scarcity of good sole leather. Leather is now becoming more easily available and will most probably regain its former markets. Even in the speciality markets such as sports shoes, sole crepe has developing rivals. One is a vulcanised sole cast from heat sensitised natural latex. Another rival is the development of new synthetic material. The U.S. is producing a "high styrene" polymer, and Canada a "lignin" polymer, for both of which it is claimed that wearing qualities, resistance to abrasion, flexibility, non slip qualities and general comfort are far superior to *any* existing material.

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\* This was written before the present position in Korea developed.

Pale blanket crepes owe their premium to their lack of colour. For colourless goods as well as for "pure coloured" articles a colourless starting point is desirable, and manufacturers are prepared to pay some premium for this. But it must not be forgotten that concentrated latex is the obvious starting point for such materials, and as the production of this variety of rubber increases and its price drops, so will the premium on the pale crepe disappear.

A further threat to pale crepe comes in the form of new fillers which overcome the colour tints of R.S.S.I. One such is "Fumed Silica" — a "white-carbon black."

The markets for sole crepe and blanket crepe are not going to disappear overnight. They will steadily diminish as new materials and new methods come into play, but for some years yet, it seems probable that the efficient producer will be able to pay his way, and to write off the cost of existing machinery.

#### **Future types.**

Looking ahead, it would appear that the premium rubber of the future will be concentrated latex. It is not likely that the price per lb. of rubber as concentrated latex, will ever approach that of smoked sheet, but it is evident that this price differential will be the only factor limiting its universal adoption. Rubber not sold as concentrated latex will most probably be disposed of as smoked sheet — with 'specified' sheet holding the market. And all the while, be it remembered, there is the threat of the ever improving man-made rubber.

#### **CEYLON'S PROBLEMS.**

About a quarter of Ceylon's rubber acreage consists of small holdings of under 10 acres, and another fifth consists of estates of less than 100 acres. Where estates can be grouped together to form compact blocks, then the objective should be concentrated latex. There will be formidable transport and storage details to face, which can only be solved by co-operative action. For estates which do not fall into these natural groupings, smoked sheet seems to be the general answer. The question at once arises: How can such small isolated units produce 'specified' rubber. The answer to this query is that they should not attempt to. They should produce rubber of as high a quality as possible — and in as big batches as possible. In central stores, the production of each unit could be distributed among a large number of bales, so that even although there may be much variation from sheet to sheet, the average properties of each blended bale would be uniform. A few of these bales would then be sampled to confirm their uniformity and to determine the characteristics to be marked on each one of the batch. The packing house, and not the producer would be responsible for ensuring that each bale of rubber was correctly marked.

Indo-China, Indonesia and Malaya have all taken very definite steps in this fight with Synthetic; Ceylon alone lags behind. The Board of the R.R.S. are taking all possible precautions that the Rubber Industry is not caught napping.

If this special issue stirs up interest in Ceylon in the future of its Rubber Industry it will not have been in vain.

A recent review of the "Competition Between Natural and Synthetic Rubber" by G. Martin in 'World Crops', April 1950 ends with the following conclusion:—

"The efforts now being made to break away from traditional methods show that the rubber grower has at last awakened to the need for drastic remedies. No longer are difficulties accepted as a reason for inaction. The mood of complacency has gone for ever and has been replaced by a belligerently competitive outlook, which gives rise to the hope that the chief effect of synthetic on natural rubber will be to establish it on a much firmer and sounder basis than in the days when it had no strong opponent to give it the urge to fight for its life."

If Ceylon is to become a backwater, accepting difficulties as an excuse for inaction, and thereby falling behind its competitors, the Rubber Industry here is doomed. It must be clearly realised "that the Rubber Producer has his fate entirely in his own hands." Natural rubber is still definitely superior to synthetic rubber in many ways and is well able to compete with synthetic rubber in a free market. It must however *compete* for this market.

Is it too much to hope that Mr. Martin's description of the modern rubber grower should apply equally well to Ceylon?

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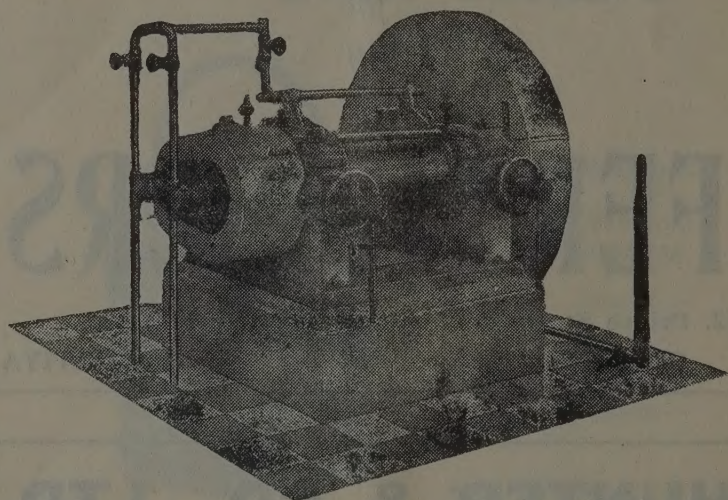
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